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EXAMINER

METZMAIER, DANIEL S

ART UNIT	PAPER NUMBER
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1712

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/816,028	Applicant(s) BOCKER ET AL.	
	Examiner Daniel S. Metzmaier	Art Unit 1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-2 and 4-20 are pending.

As a preliminary matter, reference to the U.S. Patent Application Publication 2004-0198842 has been noted and is not recognized for purposes of reference to the original specification on record.

For applicants' convenience, the support for the "room temperature" limitation is found at the bottom of page 5 of the oral specification.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05 June 2007 has been entered.

Claim Interpretation

2. Some of the claims, e.g., claim 16, R³, define the species of the alternative subgenus, e.g., R³, R⁴, R⁵; without defining the genus, e.g., R², as said species. Said claim reads on the full scope of the remaining alternative subgenus, e.g., R⁴ and R⁵, as well as the limited species, e.g., R³.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1-2 and 4-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite as to the scope of the aqueous defoamer emulsion “comprising” an oil-in-water emulsion, “which is at least one organopolysiloxane compound having a viscosity of \geq about $1 \cdot 10^6$ mPas and water”. It is unclear that the “aqueous defoamer emulsion” and the “oil-in-water emulsion” can exist as distinct emulsions. Therefore, it is unclear what is applicants’ intent of the transitional language, “which is at least one of ... and water” that defines component B).

Applicants further incorporate the limitation that “the at least one active defoaming substance (A) is not the same as the oil-in-water emulsion (B)”. It is unclear how said components differ and how the skilled artisan would distinguish said difference in the claimed compositions.

Furthermore, claim 20 sets forth “the oil-in-water emulsion comprises”, while the independent claim 1 recites “an oil-in-water emulsion which is”. Said variation in scope is further indefinite.

Also, the limitation of R^3 in claim 1 contains an improper alternative grouping. It is unclear whether “has at least 5 carbon atoms” is required or optional since it is included in the modified phrase.

The metes and bounds of the claims are indefinite since it is unclear what is the scope of “at least one active defoaming substance”. Applicants (pages 10 of the October 2, 2006 response) assert the oil-in-water emulsions claimed show no

antifoaming activity. This seems inconsistent with the facts that the same data shows that the commercial defoamer 3 showed similar results and is characterized by applicants as a defoamer. Furthermore, said showing is not commensurate in scope with the claims and no explanation has been provided why the skilled artisan would extrapolate the three emulsions provided in the examples to the scope of the claims.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 4-5, 7-15 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Dow Corning Toray Silicone Company, Ltd., EP 0 761 724 A2. Dow '724 (column 11, example 2) discloses emulsions of polydimethylsiloxane gum with a viscosity of 10,500,000 centistokes and a particle size of less than 0.4 microns. Dow '724 (column 8, lines 36 et seq) discloses organopolysiloxanes reading on those claimed, wherein R^2 is R^5 , which is R^1 and $a + b$ is about 2.

While the compositions are not characterized as aqueous defoamer emulsions, polydiorganosiloxanes are well known for defoaming efficacy. Said property would have been expected to have been inherent. Where a composition is otherwise anticipated based on structure, it is reasonable to conclude that said composition would have the same properties. A compound or composition and all of its properties are generally inseparable. *In re Papsech*, 315 F2d. 381, 137 USPQ 43, (CCPA 1963).

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Dow '724 (example 2) discloses the addition of the polydimethylsiloxane emulsions to the emulsifier and isoparaffin, which reads on at least one defoaming substance claimed (see page 2, last paragraph, instant specification). The emulsion formation disclosed in Dow '724 reads on the step of adding claimed in claim 11 since at least some of the oil would be dispersed upon emulsion formation. Dow '724 (column 6, lines 42-54) discloses concentrates.

Dow '724 (column 1, lines 8-11 and 52 et seq) disclose the polydimethylsiloxane emulsions are widely used in industry as lubricants, fiber treatment agents, cosmetic bases and paint additives. The preamble of claims 13, 14, and 15 do not distinguish the otherwise anticipated compositions. Furthermore, the polydimethylsiloxane is a dispersed polymer and paints would inherently contain polymers, e.g., latex paints.

The intended use in the preamble has been considered, the components are defined structurally, the intended use is not required for the claimed compositions, and said intended use is given little or no patentable weight. See MPEP 2111.02(II). The claim is defined structurally and therefore the intended use in the preamble does not impart any patentable distinction to the already defined structure.

See Dow '724 (column 1, lines 8-11 and 52 et seq; and column 10, lines 1-5) disclose the polydimethylsiloxane emulsions are widely used in industry as lubricants, fiber treatment agents, cosmetic bases and paint additives and may be used directly for such applications and defoamers and lubricants. As liquid lubricants cool as well as lubricate, the cooling would have been clearly inherent.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 11, 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dow Corning Toray Silicone Company, Ltd., EP 0 761 724 A2. Dow '724 discloses the claimed compositions and methods as set forth in the above anticipation rejection.

To the extent Dow '724 differs from claims 11 and 12 in the adding to a defoamer emulsion, the "selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results". See MPEP 2144.04(IV)(C). It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to add the polydimethylsiloxane to the remaining emulsion components, which

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would form at least a coarse emulsion and would improve in stability upon processing as disclosed in the Dow '724 reference.

10. Claims 1-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Schulz, Jr. et al, US 5,811,487. Schulz, Jr. et al (abstract, examples and claims) discloses the formation of silicone elastomeric paste forming emulsions having a viscosity on the order of $1.82 \cdot 10^6$ mPas, $4.93 \cdot 10^6$ mPas, and $2.7 \cdot 10^6$ mPas.

The organopolysiloxane emulsions would function as a defoamer emulsion since siloxanes and hydrophobic solids are well known to have foam inhibiting properties. Furthermore, Schulz, Jr. et al (column 9, lines 26 et seq) discloses the silicones are useful as carriers in the organic phases of antifoams as well as paints and coatings. Applicants (page 2, last paragraph, instant specification) define silicone oil as at least one active defoaming substance. It is noted that silicones are dispersed polymers.

The particle size of the emulsions would have been inherent to form emulsion characterized as having excellent aesthetics and stability in the Schulz, Jr. et al reference.

To the extent the Schulz, Jr. et al reference differs from the claims in the specific or explicit disclosure of the addition of the elastomeric silicone to a defoamer emulsion having at least one defoaming substance, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ the elastomeric silicones of Schulz, Jr. et al as a carrier in the organic phase of known defoamer emulsions for the advantage of more effectively carrying the organic phase of the defoamer. The

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incorporation in a defoamer emulsions is a conventional form of commercial defoamers as noted by applicants and clearly contemplated in the Schulz, Jr. et al references.

11. Claims 1-20 are rejected under 35 U.S.C. 103(a) as obvious over Schulz, Jr. et al, US 5,811,487, further in view of Ebbrecht et al, US 2004/0137804.

Schulz, Jr. et al (abstract, examples and claims) discloses the formation of silicone elastomeric paste forming emulsions having a viscosity on the order of $1.82 \cdot 10^6$ mPas, $4.93 \cdot 10^6$ mPas, and $2.7 \cdot 10^6$ mPas as set forth above.

To the extent that Schulz, Jr. et al differs from the claims in the explicit disclosure of a defoaming utility in cooling lubricants, Ebbrecht et al (claims) discloses organosiloxanes having use in cooling lubricants, polymer dispersions, and coatings. These references are combinable since they teach organopolysiloxane emulsions and their uses. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to the materials of Schulz, Jr. et al as a carrier in the breadth of compositions as set forth in Ebbrecht et al for their advantageous hydrophobic carrier function.

Response to Arguments

12. Applicant's arguments filed 05 June 2007 have been fully considered but they are not persuasive.

13. Regarding the rejection under 35 USC 112, second paragraph, the claimed compositions are not claimed in product-by-process format.

14. Initially, the examiner is unable to find paragraph [0036] or [0065] in the specification on file in the Official Office Application Record. Since the US PG PUB is

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not the part of the official record, it is unclear where in the specification applicants refer. It is suggested applicants employ page and line or paragraph citation of the specification filed as the Official Application File.

Applicants' reference to the disclosure of the viscosity temperature in the Schulz, Jr. et al reference, is noted. The Schulz, Jr. et al reference refers to room temperature processing at column 1, line 22, and column 6, line 40.

15. (1) The rejection under 35 USC 112, second paragraph, regarding the issue of viscosity temperature has been withdrawn in view of applicants' amendment. See above preliminary paragraph for proper support.

(2) The limitation "which is" has been substituted for "comprising". These are deemed to both define closed language. An "oil-in-water emulsion, which is at least one organopolysiloxane and water" is not open to further ingredients. Claim 20 remains rejected on this issue.

Applicants' arguments (pages 8 and 9) regarding the aqueous defoaming emulsion comprising (A) at least one active defoaming substance and (B) an oil-in-water emulsion are not deemed persuasive. Applicants' analogy is misplaced since the saline solution may be separated into water and salt. When (A) is an emulsion (particularly an organopolysiloxane emulsion) and (B) is claimed as an emulsion of formula 1 and water, it is unclear how the skilled artisan would distinguish the two components. It is unclear that the organopolysiloxanes of (A) can be separated from (B). It is unclear that the aqueous phase of (A) can be separated from that of (B).

(3) Applicants' item (3) has been corrected by amendment with the exception of claim 20. See above rejection.

(5) Applicants (page 9) assert that one of ordinary skill in the art would be able to determine whether a compound was categorized or recognized to have defoaming properties in general. Assuming applicants' statement to be true, the use of the organopolysiloxanes of claimed component (B) taught to have utility in defoaming emulsions (see Schulz, Jr. et al, US 5,811,487, column 9, lines 26 et seq) would have been within the ordinary skill level of the ordinary skilled artisan. Schulz, Jr. et al discloses the silicones (reading on the organopolysiloxanes of (B)) are useful as carriers in the organic phases of antifoams.

Applicants' remarks regarding enablement are unclear since no enablement rejection has been set forth. The examiner merely notes the breadth of the claimed subject matter and that the arguments proffered are inconsistent with applicants' disclosure. Applicants' reference of paragraph [0065] is noted. No paragraph [0065] is in the prosecution file history. Said table is found on page 10 of the original specification.

16. Applicants (page 10) assert that Dow '724 does not disclose the use of the compositions as a cooling lubricant. Applicants further conclude that all the claimed elements are not taught. This has not been deemed persuasive since the structure of the claimed organopolysiloxane (B) in an organopolysiloxane-in-water emulsion is clearly disclosed as well as the direct use thereof as a defoamer and lubricant. All the

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claimed elements are disclosed and/or inherent in the Dow '724 reference. Said claims are anticipated.

17. Applicants' (page 10) assertions that there was no reasonable expectation of success for employing the Dow '724 compositions as defoamers in cooling lubricant concentrates. This has not been deemed persuasive since Dow '724 explicitly discloses the use of the emulsions as lubricants and defoamers.

18. Any alleged results by applicants have not been deemed probative, as they are not commensurate in scope with the claims. Furthermore, the defoamers 1 and 2 are described by reference to a non-English language document, which have not been incorporated by reference. The original disclosure does not clearly describe the compositions that form the basis of applicants' data for use in cooling lubricants.

TEGO KS 95 is characterized in applicants' specification as a commercial antifoam concentrate based on vegetable oils. The TEGO® Antifoam KS 95 product literature provided by applicants is inconsistent with applicants' characterization and sets forth said product as a self-emulsifying organic antifoam concentrate containing small amounts of organosiloxanes.

It is further unclear what cooling lubricants were employed to provide the comparative data.

Applicants' disclosure does not describe said data sufficiently to show unexpected results. Furthermore, no explanation has been provided why the skilled artisan would extrapolate the three emulsions provided in the examples to the scope of the claims to the use of all active defoaming substances.

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19. Applicants (page 10) assert the reasoning rebutting the anticipation of the Dow '724 reference is applicable against the Schulz, Jr. et al reference. These arguments have been addressed above.

20. In conclusion, both Dow '724 and the Schulz, Jr. et al references disclose the use of the organopolysiloxanes (claimed in component (B)) in defoaming and/or antifoaming used directly or indirectly in applications and defoaming compositions further including their use in lubricants. The terms defoam and antifoam is deemed to be synonymous. As evidence of this, see applicants' (pages 9 and 10) characterization of TEGO® KS 95 antifoam as defoamer 3.

The rejections are deemed proper and have been maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM